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(57) Abstract :
This proposed invention introduces a paradigm-shifting Very Large Scale Integration (VLSI) signal processing system meticulously designed to meet the intricate demands of contemporary Artificial Intelligence (AI) applications. The innovation centers on a specialized hardware architecture, featuring an integrated circuit densely packed with transistors on a single chip. This unique configuration optimally balances low-power consumption and high-speed computation, addressing the limitations of existing hardware architectures. Emphasizing the importance of sustainability, the system extends battery life in portable devices, mitigates the environmental impact of data centers, and contributes to energy-efficient computing practices. Leveraging the capabilities of VLSI technology, the invention significantly enhances real-time responsiveness in AI tasks such as image recognition, natural language processing, and predictive analytics. Beyond the realm of AI, the proposed system holds transformative potential, with applications spanning healthcare, smart infrastructure, and environmental monitoring. By achieving an innovative synergy between energy conservation and computational speed, this invention envisions a future where the capabilities of computing systems are redefined, ushering in a new era of efficient, swift, and sustainable intelligent computing solutions.

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